Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A process for the chemical vapor deposition of material selected from the group consisting of silicon nitride, silicon oxide, and silicon oxynitride on a substrate using a hydrazinosilane of the formula:

$$[R^1{}_2N\text{-}NH]_nSi(R^2)_{4-n}$$

where each R^1 is independently selected from alkyl groups of C_1 to C_6; each R^2 is independently selected from the group consisting of hydrogen, alkyl, vinyl, allyl, and phenyl; and n = 1-4.

2. (Original) The process of Claim 1 wherein the hydrazinosilane is selected from the group consisting of: Bis(1,1-dimethylhydrazino)methylsilane, Tris(1,1-dimethylhydrazino)silane, Tris(1,1-dimethylhydrazino)-t-butylsilane, Tris(1,1-dimethylhydrazino)s-butylsilane, Tris(1,1-dimethylhydrazino)ethylsilane, Bis(1,1-dimethylhydrazino)ethylsilane, Bis(1,1-dimethylhydrazino)Iso-propylsilane, Bis(1,1-dimethylhydrazino)allylsilane, Bis(1,1-dimethylhydrazino)silane, Tetrakis(1,1-dimethylhydrazino)silane, N,N',N"-Tris(dimethylamino)cyclotrisilazane, N,N',N",N'"-Tetrakis(dimethylamino)cyclotrisilazane, Tris(1,1-dimethylhydrazino)Iso-propylsilane, Tris(1,1-dimethylhydrazino)allylsilane and mixtures thereof.

3. (Original) The process of Claim 1 wherein the temperature of the substrate is in the range of approximately 100 to 800ºC.

4. (Original) The process of Claim 1 wherein the pressure is in the range of approximately 10^{-5} Torr to 760 Torr.

5. (Original) The process of Claim 1 wherein the hydrazinosilane is reacted with a nitrogen source selected from the group consisting of nitrogen, ammonia, hydrazine, amines, and mixtures thereof.

6. (Original) The process of Claim 5 wherein the molar ratio of ammonia to hydrazinosilane can be greater than or equal to zero.

7. (Original) The process of Claim 1 wherein the substrate is silicon.

8. (Original) The process of Claim 1 wherein the substrate is an electronic device.

9. (Original) The process of Claim 1 wherein the substrate is a flat panel display.

10. (Original) The process of Claim 1 wherein each R^1 is independently selected from the group consisting of methyl and ethyl and each R^2 is independently selected from the group consisting of hydrogen, methyl, ethyl, propyl, iso-propyl, n-butyl, iso-butyl, tert-butyl, allyl and phenyl.

11. (Currently Amended) The process of Claim 1 ~~for the deposition of~~ wherein the material is silicon nitride ~~by chemical vapor deposition~~.

12. (Currently Amended) The process of Claim 1 ~~for the deposition of~~ wherein the material is silicon oxynitride ~~by chemical vapor deposition~~.

13. (Currently Amended) The process of Claim 1 ~~for the deposition of~~ wherein the material is silicon nitride ~~by~~ and the chemical vapor deposition is plasma enhanced chemical vapor deposition.

14. (Currently Amended) The process of Claim 1 ~~for the deposition of~~ wherein the material is silicon oxide ~~by~~ and the chemical vapor deposition is plasma enhanced chemical vapor deposition.

15. (Currently Amended) The process of Claim 1 ~~for the deposition of~~ wherein the material is silicon oxynitride ~~by~~ and the chemical vapor deposition is plasma enhanced chemical vapor deposition.

16. (Currently Amended) The process of Claim 1 ~~for the deposition of~~ wherein the chemical vapor deposition is ~~materials selected from the group consisting of silicon oxide, silicon oxynitride, and silicon nitride by~~ atomic layer deposition.

17. (Original) A low temperature chemical vapor deposition of silicon nitride in a reaction zone, comprising the steps of:

a) heating a substrate to a temperature in the range of approximately 100-800°C in said zone;

b) maintaining the substrate in a vacuum at a pressure in the range of approximately 10^{-5} Torr-760 Torr in said zone;

c) introducing into said zone a hydrazinosilane of the formula:

$$[R^1{}_2N\text{-}NH]_nSi(R^2)_{4-n}$$

where each R^1 is independently selected from alkyl groups of C_1 to C_6; each R^2 is independently selected from the group consisting of hydrogen, alkyl, allyl, and phenyl; and n = 1-4; and

d) maintaining the conditions of a) through c) sufficient to cause a film of silicon nitride to deposit on the substrate.

18. (Original) The process of Claim 17 wherein the hydrazinosilane is selected from the group consisting of: Bis(1,1-dimethylhydrazino)methylsilane, Tris(1,1-dimethylhydrazino)silane, Tris(1,1-dimethylhydrazino)-t-butylsilane, Tris(1,1-dimethylhydrazino)s-butylsilane, Tris(1,1-dimethylhydrazino)ethylsilane, Bis(1,1-dimethylhydrazino)ethylsilane, Bis(1,1-dimethylhydrazino)Iso-propylsilane, Bis(1,1-dimethylhydrazino)allylsilane, Bis(1,1-dimethylhydrazino)silane, Tetrakis(1,1-dimethylhydrazino)silane, N,N',N"-Tris(dimethylamino)cyclotrisilazane, N,N',N",N'"-Tetrakis(dimethylamino)cyclotrisilazane, Tris(1,1-dimethylhydrazino)Iso-propylsilane, Tris(1,1-dimethylhydrazino)allylsilane and mixtures thereof.

19. (Original) The process of Claim 17 wherein the hydrazinosilane is reacted with nitrogen source selected from the group consisting of nitrogen, ammonia hydrazine and mixtures thereof.

20. (Withdrawn) A composition selected from the group consistingl of Tris(1,1-dimethylhydrazino)silane, Tris(1,1-dimethylhydrazino)-t-butylsilane, Tris(1,1-dimethylhydrazino)-s-butylsilane, Tris(1,1-dimethylhydrazino)ethylsilane, Bis(1,1-dimethylhydrazino)-iso-propylsilane, Bis(1,1-dimethylhydrazino)allylsilane, Bis(1,1-dimethylhydrazino)silane, Tetrakis(1,1-dimethylhydrazino)silane, N,N',N"-Tris(dimethylamino)cyclotrisilazane, N,N',N",N'"-Tetrakis(dimethylamino)cyclotrisilazane, Tris(1,1-dimethylhydrazino)Iso-propylsilane, and Tris(1,1-dimethylhydrazino)allylsilane.

21. (Withdrawn) A composition comprising Tris(1,1-dimethylhydrazino)silane,.

22. (Withdrawn) A composition comprising Tris(1,1-dimethylhydrazino)- t-butylsilane

23. (Withdrawn) A composition comprising Tris(1,1-dimethylhydrazino)-s-butylsilane.

24. (Withdrawn) A composition comprising Bis(1,1-dimethylhydrazino)-iso-propylsilane.

25. (Withdrawn) A composition comprising Bis(1,1-dimethylhydrazino)allylsilane.

26. (Withdrawn) A composition comprising Bis(1,1-dimethylhydrazino)silane.

27. (Withdrawn) A composition comprising Tetrakis(1,1-dimethylhydrazino)silane.

28. (Withdrawn) A composition comprising N,N',N"-Tris(dimethylamino)cyclotrisilazane.

29. (Withdrawn) A composition comprising Tris(1,1-dimethylhydrazino)-iso-propylsilane.

30. (Withdrawn) A composition comprising Tris(1,1-dimethylhydrazino)allylsilane.